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THOMAS G. NEWMAN,
EDITOR.

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EDITORIAL BUZZINGS.

Ill-grounded passions quickly wear away;
What's built upon esteem can ne'er decay.

The Paris Exposition will cost over ten millions of dollars.

Father Langstroth is quite weak and still failing. After a few lines dated Feb. 20, 1889, he writes to us: "I am almost past using my pen." His many friends will be sorry to learn this—though there is some consolation in the fact that he is partially relieved from his old "head trouble."

The California Honey Crop, which was 9,000,000 pounds in 1884, fell to 1,200,000 pounds in 1887, and last year (1888) it was increased to 3,500,000. Fears are already expressed that the crop of 1889 will be a short one.

The Illinois State Fair is to be held at Peoria this year. We hope that Mrs. L. Harrison will see that there is a good display of bees, honey, and apiarian implements. There has never been a creditable exhibit of such since she had the matter in charge some years ago.

Mr. Byron Iiams, of Worcester, Mo., whose report we published on page 100, with the remark that it was "fabulous," now writes us that he "can prove his report to be true, if necessary." That report claimed a *net* profit of $360.50 from 3 colonies in the spring of 1888—an average profit of $120 per colony. If that is so, *he* surely ought to be satisfied! After this, who will dare to say that bee-keeping will not pay—at least in one instance?

The Bee-Keepers' Magazine has not been issued since last December, and we now learn that its subscription list has been sold to the *Bee-Keepers' Advance.* Brother J. B. Mason has been *advancing* on the outposts, and has taken five of them by storm. We are glad to see this, for one good periodical is far more useful and creditable than five *weaklings.*

The *Magazine* has been issued for 16 years, and for most of the time was under the able management of Mr. A. J. King; for the past 3 or 4 years it has been edited and published by Mr. John Aspinwall, at Barrytown, N. Y.

Brother Mason has our congratulations, and we hope the *Advance* will prosper abundantly. We compliment him upon the adoption of the following, which we copy from his last editorial:

We have no quarrels with any one, and do not propose to allow our journal to become a medium for others to quarrel in; and while we solicit articles of interest in our specialties from all, we shall publish nothing of a personal nature which reflects in the least upon any one.

The tendency with some is to be *quarrelsome,* and they appear to be never satisfied if they cannot get something into an article which is an offensive personality. We deplore this, and would much prefer never to receive an article from such writers, rather than to publish unkind personal remarks concerning those from whom they differ, either in theory and practice.

Farmers' Institutes.—Hon. John C. Spooner has offered a Bill in the United States Senate providing for a national system of Farmers' Institutes, to be held throughout the Union under the authority of the new Secretary of Agriculture.

This measure, if it shall become a law, will afford an effective and practical outlet for the work of the various State Experimental Stations; will give a new impetus to improved agricultural and apicultural methods, and also establish such close and friendly relations between the farming masses and the federal government as have hitherto been wholly unknown.

The provisions of the Bill are such that any State may join with the national authority in arranging and managing local institutes, and 5,000 copies of the reports or bulletins will go to each Experimental Station for free distribution, in addition to 1,000 to each member of Congress.

Those who favor this measure should write to their Senators and Representatives, and make their influence felt in its behalf. Bee-keepers are interested in this matter, since bee-culture is very properly beginning discussed at farmers' institutes.

Rural Life, a farm, stock, bee and poultry periodical, which was started a year ago, and "noticed" on page 99 of last year, is consolidated with *Popular Gardening.* This makes *two* less bee-papers, and two "obituaries" of such, this week.

The Wisconsin Bee-Keepers' Association met at Madison, on Feb. 7, 1889, Mr. C. Hatch, President, in the chair. About 60 persons were present. Last season the members produced nearly 40,000 pounds of surplus honey, and 1,910 colonies were placed into winter quarters.

Among the subjects presented for discussion were: "The President's Address," C. A. Hatch, Ithaca; "A Successful Bee-House," E. Pike, Boscobel; "Spring Management," Rev. T. H. Dahl, Stoughton; "Bee-Keeping as a Specialty," F. Minnick, Bessemer; "Points in Bee-Culture," Dr. J. W. Vance, Madison.

Upon motion, beginners were "advised to use the ten-frame Langstroth hive, or the Simplicity;" and "city and town authorities were requested, when selecting trees for shade or ornamental planting, to give the basswood a prominent place among their selections."

The officers elected for the ensuing year were: C. A. Hatch, Ithaca, President; Rev. H. A. Winters, Madison, Vice-President; F. Jonier, Wyoming, 2nd Vice-President; Dr. J. W. Vance, Madison, Secretary; J. C. Plumb, Milton, Treasurer.

The Nebraska Bee-Keepers held a State convention last January, and we have received the report from the Secretary too late for this issue of the BEE JOURNAL, but it will appear next week. The bee-keepers of Nebraska are justly proud of what they have accomplished during the past few years. They now have a building on the State fair grounds, built for the exclusive exhibit of bees and honey and apiarian supplies. Their premium list for next year will be increased and revised so as to give more and larger premiums, and the State Board of Agriculture have asked for a full report of the proceedings of their last convention, to be published in their annual report. We congratulate our Nebraska brethren upon their work and success.

Foul Brood, so-called, has considerable attention in this issue of the AMERICAN BEE JOURNAL, because of several inquiries concerning the treatment of that dreaded disease.

The Approaching inauguration of President Harrison, and the opening of the new *regime* at Washington, give universal interest to Dr. Ferdinand C. Iglehart's article on "The Nation's New Leadership," which opens the March number of *Frank Leslie's Popular Monthly.* The lives and characters of President-elect Harrison and Vice-President-elect Morton, and of their wives, are sketched in vigorous, picturesque and intimate style; while the accompanying portraits and other illustrations give a permanent, as well as a timely, interest to this contribution. The table of contents of this number of the magazine is as rich and varied as ever, literature and art vying with each other in its attractive pages.

GLEANINGS OF NEWS.

Seasonable Hints.—There is much apiarian work that *can* and *should* be done in the winter, or before spring opens. Mrs. L. Harrison, in the *Prairie Farmer*, describes her methods of doing some of it, in these words:

MELTING WAX.—I like to do this kind of work when it is too cool for bees to be upon the wing, for, if they are flying, and smell the wax, they will try to gain admittance through the key-hole, or even down the chimney. I re-melt wax over a pot of boiling water, in a pan. This pan should be small enough to fit the inside of the kettle, and be held in place by the rim. When it is melted, I strain it through a coffee-stainer, into pint-basins to cool.

I melt out both ends of a tin fruit-can, to hold the strainer while I pour the wax. The strainer should be hot, and, while not in use, should be set in the oven. I let the wax settle a few moments, but, before it begins to harden, pour it into another pan, leaving the dregs. The pans are all of the same size, so that the cakes will be of uniform size.

Scrape off all bits of comb and propolis, and, however black and dirty it may be, empty it into an all-metal sieve; and, when it is full, set it over a pan half-full of water, and put it into the stove oven.

If the water in the pan boils very hard, it may run over, but if only a moderate fire is kept, there will be no danger. When the wax is all melted and run down into the water, the residue in the sieve can be scraped into the fire. It makes such good kindling that sometimes I scrape it into paper, roll it up and keep it for kindling to build a fire another time.

When the water in the pan is cold, a nice cake of wax will be on top. I put these cakes away until a favorable time, when I re-melt and cool in uniform shape for the market.

ODDS AND ENDS OF HONEY.—Where much honey is handled, there will be more or less that is not in good marketable condition. Pieces that are not capped will be granulated, while others may be only partly filled. The best way I have ever found to utilize such honey is to melt it in a pan over a kettle of boiling water. As soon as it is fairly melted, it should be set off to cool, as heating honey too much injures it. When cold, the wax will be in a liquid cake on top of the honey. This honey, although not as good as extracted honey, can be used for many purposes, and for feeding bees in the spring.

Good pieces of honey can be sold as chunk-honey; the dry, unfilled cells can be scraped off, and that which is filled and capped on one side, and has unfilled cells on the other, can be carefully scraped off, leaving only the base, with its clearly-defined septa of cells. I often fill cheap tin pails with such pieces of honey, and sell pail and contents. Such pieces of honey require very careful handling, and should be lifted with the hands, so that no cells will be broken, as would necessarily be, if a knife were used.

HONEY-HOUSE STOVE.—By the way, I would like to state that there is no stove equal to a cook-stove for a farmer's shop or honey-house. It is so handy to wash and oil harness by, melt glue, or for the boys and their friends to pop corn, crack nuts, make candy, etc., teaching them to love home, and keeping them away from "the corners." When a stove was needed for our honey-house, we took the cooking-stove from the kitchen, where it had done faithful service many years, and had a new one in its place. And all the family have been thankful that we did.

CLEANING HIVES.—This is a favorable time to take all the hives not in use into the shop (which all prosperous farmers have) and give them a thorough overhauling. I know of no better tool to clean out the inside of a hive with than a wide chisel.

When the hives are cleaned out, they should be treated to a coat of paint. I prefer the lower hive to be painted white with lead and oil, and the upper story with red, mineral paint. The roof should receive special attention, especially if it is grooved, being made of two pieces of boards. If the boys and girls want to help, do not push them away, but "let 'em pitch in." There is so much work to be done in the world that it is a pity that all should not help that want to.

Alfalfa Honey.—In *Gleanings* we find the following concerning a sample of alfalfa honey, which will be read with interest:

Dr. C. C. Miller, while in Pueblo, Colo., purchased a sample of alfalfa honey of that region. On his arrival home at Marengo, Ills., he sent us this honey, together with a sample of cucumber honey. The flavor of the alfalfa is fully equal to clover, which it resembles closely. It is seldom that we take more than a good taste of honey sent us as a sample; but after A. I. R. had tasted, E. R. R. and J. T. C. followed suit. With an expression of "That's good," we kept on scooping it up with our knife-blades until—well, there is just a little left for you to try. The fact that this plant yields from three to four crops of hay in a season, that it will grow in most Northern localities, together with the fact it yields a superb honey, are no small recommendations in its favor. The flavor of the cucumber could hardly be called first-class, but on the whole it is better than the majority of the second-rate honeys. The taste reminds one a little of cucumber itself, and this becomes more evident a few moments after tasting.

Bee and Honey Shows at Fairs are very important matters. At the Indiana State Convention there was quite a discussion on the matter, and Mr. G. K. Hubbard, in the *Indiana Farmer*, makes these additional remarks about the desirability of having special buildings for apiarian exhibits:

If the object in having a good apiarian exhibit at the fair is to enlighten the masses, and to induce the careless bee-keepers to keep their bees more intelligently, and to use better implements, we think it would be a mistake to put the display in a building by itself. The money that the building would cost the fair association, would pay greatly increased premiums in our department for several years.

In our judgment it would be better for the association to spend $40 or $50 in the arrangement of a neat booth in the main Agricultural Hall, and put in $50 or $75 worth of good show-cases to contain the smaller articles. In this way, we feel confident, a very tastily arranged exhibit could be made, and that too, in a manner to attract the attention of the masses, and delight the bee-keepers.

Much may be said in favor of a separate building, and we would like to hear from others on the subject. Dr. A. B. Mason and Mr. J. N. Heater, as well as others, are invited to tell our readers what they think about it.

Lizzie Cotton's advertisement may now be seen in many of the religious and literary periodicals, and as many will be deceived by her highly-colored representations, it is timely to give another warning to beginners in apiculture. All the bee-periodicals have repeatedly warned the public not to be deceived, but still she looks for pastures green, by using the columns of the papers who know nothing about her, or her fabulous stories about what can be done with her so-called "new system of bee-keeping." Andrews & Lockhart, of Patten's Mills, N. Y., write as follows concerning her transactions:

Enclosed is an advertisement of Mrs. Lizzie Cotton, which was clipped from the *Household Companion* of New York city. We would say to all beginners in bee-keeping—Let Mrs. Lizzie Cotton's "New System of Bee-Keeping" alone! It is deceptive. We will give here one instance: A party we know bought one of her hives (which was a poor concern) with a swarm of bees in it, for which he paid $20.00. After waiting a long time he got the hive of bees, which was a very small colony, and he is sorry to say that he found out that they had foul brood of the worst kind; and what few colonies he had before, caught the foul brood, and he lost all the bees he had! That was a very unlucky twenty-dollar colony of bees for him. Such is her way of serving people. We are sorry to say that she still seems to flourish and entice people to try her new system of bee-keeping, by her gaudy way of advertising! If she means to do right, why does she not advertise in the bee-periodicals?

This is the first instance that we have heard of her bees being affected with so-called "foul brood." We can hardly think that she would knowingly send out such diseased bees—at least we hope not. The reason she does not advertise in the bee-periodicals is, that none of them would receive her advertisement! She works among novices only.

Bees are Wintering Well, so far, in nearly all parts of America. Mr. N. N. Betsinger, Marcellus, N. Y., writes thus concerning their condition in that State:

Bees in this State are wintering nicely thus far, but all must look out for shortage of honey before blossoms appear again. I have 72 colonies of mine buried in a clamp. This is the second winter I have used the clamp, and I am much pleased with the system, and I shall extend the clamp building next summer, so as to take all my bees. The points of advantage are cheapness, convenience, ease of manipulation, and safe wintering.

Catalogues for 1889 are on our desk from—

George S. Josselyn, Fredonia, N. Y.—20 pages—American Grape Vines.

Christian Weckesser, Marshallville, O.—8 pages—Bees, Seeds, Plants, Potatoes, etc.

Daniel Wyss, New Philadelphia, O.—8 pages—Nursery Stock.

Bush & Son and Meissner, Bushberg, Mo.—4 pages—American Grapevines.

Thos. A. Cox & Co., San Francisco, Calif.—60 pages—Flower, Fruit and Garden Seeds.

Geo. H. Kirkpatrick, New Paris, O.—16 pages—Bees, Honey, and Bee-Keepers' Supplies.

QUERIES & REPLIES.

Getting Worker-Comb Built by a New Colony.

Written for the American Bee Journal

Query 615.—With starters in the brood-frames, five cells deep, what should be the most favorable conditions to assure the building of worker-comb by a newly-hived swarm? —Maine.

A good flow of honey.—H. D. CUTTING.

A good, fertile, prolific queen.—DADANT & SON.

They build every time, with me. I put sections with some comb above.—A. J. COOK.

It should have a young and prolific queen.—M. MAHIN.

Warm, pleasant weather, with plenty of honey in the fields.—MRS. L. HARRISON.

The best is to put in full sheets of comb foundation. It is poor economy to use starters.—P. L. VIALLON.

Most favorable conditions: A big swarm, with a young, vigorous, laying queen, and a plentiful yet moderate flow of honey.—J. P. H. BROWN.

I doubt if I can get my bees to do it. Hutchinson's plan works pretty well with him.—C. C. MILLER.

Plenty of storing-room in full drawn combs above, and a queen excluder between, might accomplish this end.—J. M. HAMBAUGH.

Contract to five frames, giving plenty of section room above, and using a queen-excluding honey-board under the sections.—G. M. DOOLITTLE.

A contracted brood-chamber, a vigorous queen of the current year's rearing, and honey receptacles above containing comb or partly-drawn foundation, from which the queen is excluded.—R. L. TAYLOR.

1. The super on above, with a queen-excluding honey-board between. 2. A queen vigorous enough to keep the cells full of eggs as fast as constructed. —EUGENE SECOR.

"The most favorable conditions should be" just such as will insure the desired result. A warm atmosphere, a good honey-flow, and a young queen are very favorable.—A. B. MASON.

This requires too much of an answer for this department, it seems to me, and I have never seen it answered so fully and completely as in Hutchinson's book, on "The Production of Comb Honey."—JAMES HEDDON.

The conditions most favorable are, that the honey-flow should be light, and that comb will not be built faster than the needs of the queen require. In other words, if built for the queen, it will be worker size; if built for storage, it will be storage or drone comb. —J. M. SHUCK.

A good honey-flow is the prime requisite. The only plan is to watch for the drone-comb, and cut it out when started. If the bees become too persistent, use full sheets of worker foundation.—WILL M. BARNUM.

Just what would be "the most favorable conditions" in any case. As to conditions, it makes no difference whether there are starters or full frames of foundation. A large swarm with a good honey-yield will give good results. The queen should not be over 2 years old, in the case asked about.—J. E. POND.

Some drone-comb will surely be built when starters only are used. The only thing that will discourage drone-comb building is, to put the frames 1⅜ inches, or less, from centre to centre. Some drone-comb will be built, and if you do not wish to go to the expense of foundation, you can cut out the drone-comb, and fit in pieces of worker-comb instead.—C. H. DIBBERN.

1. A swarm with a strong, young queen, capable of laying all the eggs that she can find room for. 2. Do not give too many frames at a time. But as nearly all swarms are the result of a desire on the part of the worker bees to supersede old or otherwise weak queens, the only safe plan to get good solid worker-combs is, to fill the frames full of foundatton.—G. W. DEMAREE.

Good honey weather, and a profuse supply of nectar are some "conditions" not to be despised. A good queen is always an essential "condition."—THE EDITOR.

Perforated-Zinc vs. Tin or Wood for Separators.

Written for the American Bee Journal

Query 616.—Would perforated-zinc be any better than tin or wood for separators?—T.

No.—WILL M. BARNUM.

I do not know.—J. M. HAMBAUGH.

I prefer the tin.—G. M. DOOLITTLE.

I have never tried it.—A. B. MASON.

I never have tried it.—EUGENE SECOR.

I do not know. Some say yes.—A. J. COOK.

It will do, but it is more costly.—DADANT & SON.

No, I do not think that it would be any advantage whatever, and it costs more.—C. H. DIBBERN.

I prefer the tin separators to all other materials.—P. L. VIALLON.

Yes. Tin rusts, and the perforations in wood are not reliable.—R. L. TAYLOR.

I think not, but I have never tried it.—MRS. L. HARRISON.

I have never tried it for the purpose, but I have grave doubts of its being any better.—J. P. H. BROWN.

No. Wood is the cheapest, and fortunately the very best.—J. M. SHUCK.

It is probably better than tin. For loose separators, hardly enough better than wood, to pay extra cost.—C. C. MILLER.

No; perforated separators have no disadvantages except in theory.—JAMES HEDDON.

There would not be but little difference if the tin and wood were perforated.—H. D. CUTTING.

I do not think that it would. In fact I do not think that perforated separators of any kind are of any value as compared with unperforated. Besides, zinc would be too thick and clumsy.—J. E. POND.

I do not know. I never used separators, and I do not expect to. I can crate my honey without. I put the sections in the crate in the order they were when in the hive, and I have no trouble.—M. MAHIN.

I have never tried it for separators; but I think I can say in advance that it will not do at all. But if it would do even better than tin or wood, its present cost would be in the way of its extensive use. I prefer tin for separators, though I have seen very nice wood separators.—G. W. DEMAREE.

Zinc may be better than tin for separators, but its cost is more; perforations are of no particular advantage, however.—THE EDITOR.

Convention Notices.

☞ There will be a meeting of the Susquehanna County Bee-Keepers' Association at the Court House in Montrose, Pa., on Saturday, May 4, 1889, at 10 a.m.
H. M. SEELEY, *Sec.*

☞ The DesMoines County, Iowa, Bee-Keepers' Association will hold its annual convention in the Court House at Burlington, on April 23, 1889, at 10 a. m. All bee-keepers are invited. JOHN NAU, *Sec.*

☞ The 11th annual session of the Texas State Bee-Keepers' Association will be held in the apiary of W. R. Graham, of Greenville, Hunt Co., Tex., on May 1 and 2, 1889. All bee-keepers are invited. The last meeting was held here last May, and was the best ever held. So we look forward to a good time next May. A cordial welcome and hospitality will be tendered to all who come. G. A. WILSON, *Sec.*

A Home Market for honey can be made by judiciously distributing the pamphlets, "Honey as Food and Medicine." Such will create a demand in any locality at remunerative prices. See list on the second page of this paper.

CORRESPONDENCE.

FOUL BROOD.

Experience with Curing the Foul Brood.

Written for the American Bee Journal

BY A. A. BALDWIN.

In the fall of 1886 four apiarists (including myself) bought a carload of California honey for feeding our bees, as it was cheaper than sugar, and it would also help the honey market that much. We took the precaution to write to the party that produced it, asking him if there were any foul brood among his bees, and getting an answer that there was no disease among them, we felt safe to use it without boiling.

During the fall and the next spring, we fed it to about 1,000 colonies of bees, and it was sometime in April that we found that we had given them the foul brood. We had had experience in New York with the disease, and knew what to expect. We talked the matter over together, and felt as might be expected—out of patience with ourselves for not being more careful, and on the whole a good deal "blue" about it. We concluded to wait until the close of the honey harvest before making an effort to get rid of it.

The disease progressed much more rapidly in my apiary than in either of the others, showing that the conditions were more favorable for it, or else my strain of bees were not as strong to resist it. Perhaps the water supply had something to do with it, although some of the colonies fed, did not show the disease until late in the season. I had fed 128 colonies out of the 150 before I discovered the disease, leaving 22 colonies all right.

Some two weeks later, I found whole frames full of dead brood, and some 75 colonies that were not hatching enough bees to keep up the strength of the colonies, and if I saved them I would have to be about it. I took the back numbers of the AMERICAN BEE JOURNAL, and looked them over until I found Mr. McLain's remedy, and he was so positive in his statements in regard to the cures that he had wrought with it, that I went to work with no little confidence to treat mine.

I doctored 80 colonies, following his directions to the letter, and watched, as you can imagine, with a good deal of interest, the development of the new brood; but, alas, vain hope! I found that I could as well expect to move into a house from which the occupants had been carried to the grave by small-pox, and remain healthy, as that a healthy bee could be reared in a cell from which a putrid foul-broody mass had been removed. I doubt very much that a remedy will ever be found for the disease, and use the same combs.

I found that combs that had stood empty through the winter, in which I could not detect the disease by the scent or looks, gave the disease to clean, new swarms.

The season (1887) was a very poor one for honey; the healthy colonies gathered barely enough to keep up their strength; but those diseased were fast running down in numbers and in stores, and becoming discouraged, many of them swarming out, leaving their hives in disgust. I had to be on the watch to keep the healthy ones from cleaning out the deserted hives.

Early in July I went to work to make new colonies, by brushing the bees from one, two, or three of the diseased colonies, according to their strength, together into a clean hive, and after two days, giving them six frames full of foundation, and feeding them until they had sufficient stores for winter. These where made strong enough, became strong, healthy colonies. I found later by experimenting, that I could give them foundation at once, without continuing the disease, and thus save time and trouble.

I rendered the combs into wax, and made that into foundation, and used it for brood-combs again. I wintered a few colonies that showed the disease a little, and found some others that developed the disease as they bred up in the spring, some 15 in all, I believe. Some of the worst cases I put on foundation about May 1, feeding them liberally. One of them gave me 90 pounds of comb honey for my trouble. Those colonies that had it light, built up and swarmed, when I brushed out the remaining bees with the swarm, and gave the frames of brood to other sick colonies to hatch out, till I had reduced them to a few colonies; these I made queenless, and as soon as they had a young, laying queen from a healthy cell given them, I brushed them out and treated them as a new swarm.

I steamed most of the hives before using them again. The balance I fumigated with burning sulphur. Both treatments proved effectual. Eighteen of the 22 colonies not fed the honey, remained healthy through it all, in the same yard, and I have no doubt but that the four that took it, got a lick of the honey while feeding the others, or while treating them; for if the disease-germs floated in the atmosphere, or were carried by the bees to the flowers to be taken by other bees to their hives, and thus spread the disease, as some think, none would have escaped it.

During the first stages of the disease it cannot be detected by the odor; but later, as they begin to open the cells to investigate the trouble, thus exposing to the current of air passing through the hive, the putrid contents, it can be readily detected by taking a sniff at the entrance of the hive.

We have conquered the disease, and now have a full stock of as fine bees as we ever had. We may find a few cases during the coming season to deal with, but we are not troubled about it.

We have thus saved by our labor, many of the bees, and a thousand hives worth at least two dollars each; also 1,500 pounds of wax, which, I think, is much better than burning them all, as some recommend.

Our experience agrees with Mr. Quinby's given twenty or more years ago, viz:

1. That the disease is carried in the honey, and in no other way.
2. Thoroughly boiling the honey makes it safe for feed.
3. Boiling, steaming or fumigating with sulphur, renders the hives safe to use again. (I would also add that the wax from diseased combs is safe to use for brood foundation again.) Never feed honey without first boiling it unless you *positively know* it to be healthy.

I hope that this experience may help some brother apiarist who may be in like trouble.

Independence, Mo.

GOOD YIELD.

Keeping Bees in Texas—Peaches Blooming.

Written for the American Bee Journal

BY A. C. ATEN.

During the season of 1888 my bees produced 11,000 pounds of honey, mostly extracted, being an average of 112 pounds per colony, spring count; besides an increase of 40 colonies. They have wintered well, or rather we have had no winter, as there were only three nights that ice formed in the most favorable places.

Roses have been in bloom all winter, and lilies were in bloom in the garden in January. Peaches are beginning to bloom, and bees are busy. There is scarcely ever a spring, however, in this part of Texas, but that we are in danger of losing some colonies by starvation, unless we feed them.

There comes a time after fruit-bloom, that there is scarcely any honey to gather for two or three weeks, and

bees having exhausted their stores in brood-rearing, starve to death unless cared for. The careful apiarist, however, will see that his bees at this critical time are fed, knowing that in a very short time everything will be changed, and his bees will be booming. Just at this starvation-time, bees will eat pollen until they get the diarrhea as badly as they ever get it in the North in winter, and that, too, when they can fly every day; as soon as they are fed, however, they get well. It is almost marvelous how soon they will get well on a proper diet.

While the honey crop fails in some parts of Texas quite often, where my apiaries are situated—13 and 16 miles north of the city of Austin—there has been no failure for many years. It is the rich, black-land prairie, with narrow strips of timber along the streams. The honey is from hoarhound, horsemint, wild marigold, asters, different kinds of fruit, cotton, corn, wild morning-glory, milk-weeds, and various other plant of lesser note. All of our honey is pretty good.

We have had a great deal of rain this winter—more than almost ever known—roads almost impassable, and all business is at a stand-still; but little farming is done yet. The rains appear to be over at present, and the ground dry enough to work.

Round Rock, Tex., Feb. 14, 1889.

SWARMING.

How to Make a Box for Hiving Swarms.

Written for the American Bee Journal

BY J. E. WALKER.

As the time for swarms is drawing near, I will describe my swarming-box. I make it of light material, 12 or 14 inches square, and 10 inches deep, with several small auger-holes in the sides. A strong wire bail is put on, and by bending the wire once around in the centre, a ring is formed in the bail.

I have two or three of these boxes in my apiary, and as many straight, light poles of different lengths, made of poplar. I tack a strip of leather to each side of these poles, and over one end, and put on a common harness-snap. This I snap into the ring on the bail of the box. I have other poles with a limb left on each, to correspond in length with the one I wish to use.

I push the box up under the swarm or cluster, and punch the limbs, when most of the bees fall into the box. I put the end of the pole on the ground, and lean it away from the limbs of the tree, and soon all the bees that have missed falling into the box, will settle on it. If any come back to the place where they settled, I keep shaking them off, and they all will soon setttle in and on the box.

Then I lower the box slowly to the ground, take the snap from the bail, and carry the box and bees slowly to the hive. By going slowly, all the bees that are on the wing, will follow the box.

I have the hive ready where it is to remain, leveled with a spirit level. In front of the hive is a loose bottom-board, placed level, and close up to the entrance. I then turn the box upside down slowly, and pour the bees out, when they make a stampede for the hive-entrance. I think that this plan is perfect.

Clarksville, Mo.

ODOR AND COLOR.

Their Influence upon the Honey Gathering Insects.

Written for the American Bee Journal

BY MAHALA B. CHADDOCK.

On page 838 of the AMERICAN BEE JOURNAL for 1888, Prof. L. H. Pammel, speaks of insects wasting their time when visiting flowers where their services are no longer needed to pollenize the blossoms. The insects know nothing about the needs of the flowers. To prove this, I have only to quote from Prof. Pammel's article on pages 634 and 635 of the same volume, viz:

"Muller records the most interesting case of Salvia Sclarea, in which the tube of the corolla is so long that the honey-bee is not able to get the nectar in a normal way. It made several attempts, but did not perforate the corollas. When, finally, it found several in which the corollas had just loosened, it began immediately to sip the little drops of nectar which still adhered to the base of the corolla."

Now, here was a flower that was too far along to need the services of the bee, but the bee kept on trying to get at the nectar until it found some flowers so ripe that the corollas were loosened and falling off; from these it sucked the little drops of nectar. There is *always* a difference in the color of flowers at the different stages of their development, and the *signs* that the insect would need to tell them that their services are no longer needed, ought *surely* to be hung out by the time the corolla is loose enough to fall off!

The fact is, when a flower begins to fade, the coloring-matter seems to collect in the thicker parts of the petals, and makes darker spots or stripes there; but it is only Nature doing her own work, in her own way, and is not a "signal" nor a "sign" of anything. The fact that bees work on flowers when the corolla is so loose that it falls off, proves that bees do not look for "signals" in flowers.

On page 838 (1888) Prof. Pammel says: "Most naturalists agree that color is an important factor, in attracting insects to flowers, and that they have done much to develop the colors in flowers."

Well, in a note in the *Popular Science Monthly*, on page 718, we read: "Dr. Schweinferth has obtained specimens which were originally deposited in the forms of offerings from Egyptian tombs, 4,000 years old, which are as satisfactory for the purpose of science as any collected at the present day, and which, consequently, supply means for the closest examination and comparison with their living representatives. The colors of the flowers are still present—even the most evanescent. The chlorophyl remains in the leaves, and the sugar in the pulp of the raisins. Dr. Schweinferth has determined 59 species, some of which are represented by fruits, others by flowers and leaves, and the remainder by branches.

"Mr. Caruthers also referred to the deposits discovered at Cromer, and the remains which exist of pre-glacial flora, and came to the conclusion that the various physical conditions that necessarily affected those species in their diffusion over such large areas of the earth's surface in the course of say, 250,000 years, should have led to the production of many varieties, but the uniform testimony of this pre-glacial flora, so far as the materials admit of a comparison, is that no appreciable change has taken place."

So, then, we find according to various authors, that color was given to flowers to attract insects to fertilize them, and that insects have done much to develop the colors in flowers. But here, these *eminent* naturalists examine these flowers from Egyptian tombs, and find them true to the flowers that we know; and these deposits at Cromer carry us back 250,000 years, and as far as the materials admit of comparison, there has been no *appreciable change!*

The insect world has done it best for the floral kingdom, for vast periods of time, and still they are about the same! The brightly-colored flowers that Prof. Pammel mentions, contain either nectar or pollen, or both, and the insects are attracted by *the same*; but the hazel, walnut, oak, grasses and sedges are *odorless*, and that is why they are not visited by insects. For if

bees will go through a key-hole into a dark cellar to find honey, they can find honey in any flower that grows, without any coloring-matter about it.

Prof. Pammel wishes me to "explain why the sunflower should have developed the large, conspicuous ray-flowers surrounding the head." That is very easy. They are Nature's works, and grown on natural principles. The sunflower is a vigorous grower, and the numerous seeds demand a suitable support around the edge to keep them from spreading. The coloring is *only accidental*, as it is in all plants.

As to "the vermillion red leaves surrounding the blossom of the poinsetta," they are *entirely unnecessary*, as that little "pocket-book" full of the thickest and sweetest nectar on the *side* of the blossom bud is surely enough to attract all the insects necessary to the fertilization of the flowers. Then there are the stamens full of pollen.

If nectar is placed in flowers to cause them to be visited by insects, why is it not always placed in the centre of the flower? Now, this poinsetta has its little "pocket-book" full of honey on the side, clear away from the pollen, and bees could empty these little pockets, time after time, and never get any pollen on their legs.

Will not some of the bee-keepers in Texas tell us if the poinsetta grows there? It is a native of Mexico, and Texas is pretty close to Mexico, and there are many bee-keepers in Texas. Then tell us if the poinsetta is not a glorious honey-plant; what the honey tastes like; how many tons an acre of poinsetta plants would yield, and if the plant bears many seeds.

Then Prof. Pammel asks if the colors and forms of flowers have been developed merely to gratify our senses. The great end and aim of all vegetable life (of all life, in fact) is to perpetuate itself. The flowers bloom merely that the seeds may ripen—the coloring is only accidental. All nature, the earth, the air, the sky, is full of color, and it is all accidental. It was not made to please anybody, nor to attract anything.

The vast coal-beds of Illinois contain enough coloring matter to color the wearing apparel for the whole world. "One pound of coal affords magenta enough to color 500 yards of flannel; aurine sufficient for 120 yards of flannel 27 inches wide; vermillion scarlet for 2,560 yards of flannel, or alizarin for 255 yards of Turkey-red cloth.

"We are acquainted with about 16 distinct yellow colors, about twelve oranges, more than thirty reds, about 15 blues, seven greens, and nine violets; besides various compounds, giving an almost infinite number of shades and tones of color." And in the face of all this coloring-material which is burned up, we begin to talk and fancify about *why* flowers are colored.

Look at the coloring of the deep-sea fishes. I quote from Sir John Lubbock. I see that all of our Professors are very fond of Sir John Lubbock. He says: "The conditions of life in ocean depths are very peculiar. The light of the sun cannot penetrate beyond about two hundred fathoms; deeper than this, complete darkness prevails. These deep-sea fishes are either silvery, pink, or in many cases black, sometimes relieved with scarlet, and when the liguminous organs flash out, must present a remarkable appearance. The deep-sea fishes are very peculiar. The abysses of the ocean are quite still, and black darkness reigns. (The pressure of the water is very great)." (I had the rest of this copied out of a cyclopedia, but I have lost the paper containing it.)

Now here are these deep-sea fish, down in the dark depths of the ocean, where the sun's rays never go, and they are colored pink, and silver, and black, relieved with scarlet. What were they colored for? and who was to see them? Does not this prove that coloring in Nature is only *accidental*?

Prof. Cook, in his article about "Tiger Beetles," in *Gleanings*, page 49, says: "As the weasel in his winter robes of white, or the Arctic fox is hid by the snow on which he treads." I think Prof. Cook must be a poor hunter, or he would know that dogs trace the weasel, and the Arctic fox by the *odor*, not by the color; and they will follow *scent* for miles without seeing the game; of what use then is the mimicry of color, so far as the weasel and the Arctic fox are concerned? What is color anyway? I say it is pigment!

Sir John Lubbock (Oh, how I love to quote Sir John Lubbock) says:

"Light is the effect produced on us when waves of light strike the eye. When four hundred millions of millions of vibrations of ether strike the retina in a second, they produce red; and as the number increases, they pass into orange, then yellow, green, blue and violet."

The above is a very wise explanation of color, but for ordinary mortals colors are chemical substances, formed in coal, in flowers, in clays, and numerous other substances. They are made by boiling, or stewing, or pressing different substances together, and they are always wholly and entirely accidental! The setting sun, that paints the clouds and hills in crimson and gold, sinks, in a few minutes, out of sight, and the clouds are grey and the hills are green again.

DISEASED BEES.

Eradicating Foul Brood from the Apiary, etc.

Written for the American Bee Journal

BY SAMUEL BARNHART.

In the AMERICAN BEE JOURNAL for March, 1888, I wrote my experience with foul brood, and how I eradicated it from my apiary. Thinking that some at least might wish to know what success I had, I will repeat the treatment.

I put the bees into empty boxes for two days, scalding and cleansing the boxes effectively.

I then put them back on full sheets of foundation, destroying all combs in which there had been any brood, and saving all the nice, white outside combs, some of which were only partly drawn out. I treated all but 2 colonies at the time they appeared to be only slightly affected, but they soon became so bad that it became necessary to treat them she same way.

From the 2 colonies I took eight frames of brood, with a few bees, and put them into an empty box, and they are there to-day, as free from foul brood as bees can be. They were without a queen for at least five weeks, and being weak, consumed all there honey, of which they had a very little. At first I fed them syrup, and afterward gave them two frames of bees and brood from another colony, and in the fall it was as strong as any colony I had. Last spring that was the first colony I divided, and very soon I had two good colonies, both of which stored considerable surplus honey.

After this colony, without any aid whatever, had cleansed their own combs, and was rid of foul brood, I thought, why can I not use the combs I had saved after fumigating frequently, and effectually with sulphur, and spraying with carbolic acid? I then gave the nicest of these combs containing no honey, to several colonies, without any bad results whatever.

Whether there is anything in it or not, I will not pretend to say, but I put a small camphor poke on top of the frames of each colony, and fed a little sulphuric acid through the summer, with an occasional spraying with a weak solution of carbolic acid, the bees at the entrances of the hives. After getting through safely so far, I was foolish enough to risk still further, by giving to a very late, small second swarm, six frames (the last I had), some of which contained some of the old honey; I sprayed them all with carbolic acid, but did not uncap the honey, neither did I use any camphor nor give them any attention whatever. Sometime afterward, when I exam-

ined them, in taking out the second frame, oh, the infernal foul brood! How I regretted using combs with the honey in; being taught when a boy not to "cry over spilt milk," I concluded to do the best I could under the circumstances. I immediately took away the queen, and I suppose for sometime I troubled them with more sulphuric and carbolic acid than was agreeable to them. I afterward gave them a queen, but being late, and the weather cold, they reared no brood. I do not fear but what they will come out all right.

I put them into the cellar the last of November, without one drop of honey in their combs—they are living on sugar candy, and doing first-rate. However they may come out I cannot believe that either the queen or bees ever become affected, but if kept two days in empty boxes, then put into perfectly clean or new boxes, there will be no return of foul brood, unless they get access to foul-broody honey.

The afterpart of the summer here was anything but agreeable or profitable to bee-keepers. There was no buckwheat honey; fall flowers would have produced abundantly, but the weather was so wet and cold, so that the bees could not harvest it. The winter has been open, wet and warm—favorable for out-door wintering. My bees (over 30 colonies in all) are resting very contentedly in the cellar, without giving me any concern whatever. I have them right under the kitchen, where we keep potatoes. Some of the family go in with a light every day, and neither that nor the noise from above annoys them in the least.

Bees Going 40 Miles.

I was telling a dutchman the other day that there was a man somewhere in America, who had bees that went 40 miles to gather honey. "Oh," said he, "dos ist nix. Ouse in Schermany der vos von verry schmart man, vot dinks he likes to go in der pee-pisness. So dot man he pys some bees—great big uns—shust annoder dime so big as yours. So vot you dink him do? Vy, dot man he pe so schmart, so he dinks he makes von air-line railroat, vay up in de air; ond ob, oh, sich berry fine wire midout von ent, so de pees dey haf to go von way unt dey haf to gome von odder way. Den dot man him git oh, so hundrets ob sich wee tiny leedle cars, mit a little loop, so dot dem pees shust fly riet mit dare headts in dos loop, unt avay gos dem cars. Now dos ist so. I dells you, dot man he pe so schmart, him quick git dem pees draned shust so goot all-do-gedder as dem fire gompanies in de citties haf der horses.

Greensburg, Pa.

Only a Clover Blossom.

Written for the American Bee Journal
BY GEORGE W. YORK.

It was only a clover blossom,
So modest, so pure and sweet,
That grew by the roadside so humbly,
The bee in its flight to greet.

The bee knew the blossom had in it
A drop of liquid so rare,
That 'twere worth an extra exertion,
To search for it far and near.

'Twas a drop of such precious nectar—
Quite fit for the gods to sip—
That the bee gathered up so gently,
Like a kiss that leaves the lip.

'Twas only one drop of sweetness,
Yet joy to the heart it brought,
Of the bee that hovered, so weary—
For long had the drop been sought.

'Twas only a smile that was given,
But it bore a wealth of cheer
To the poor and youthful toiler,
Whose life was so dark and drear.

'Twas only a moment of life yet,
For one who was called to Heaven,
But that was a time quite abundant,
To forgive, and be forgiven.

Thus the *drop* of nectar was ample,
To gladden the weary bee;
The *smile* to make lighter the burden—
The *moment*, a life to free.

Chicago, Ills., Feb. 7, 1889.

WINTERING.

Report for Two Winters—Experiments.

Written for the American Bee Journal
BY DANIEL WHITMER.

On Nov. 20, 1887, I placed in my bee-cellar, under the dining-room, 207 colonies of bees in good condition (with the exception of about six, two or three of which were queenless), and left 36 colonies on the summer stands. I wintered them very well, with the loss of 14 colonies by winter and spring dwindling.

In the spring, by selling some, and uniting others, I started with 150 colonies of Italian bees, but on the account of a very dry season, I secured only 4,500 pounds of honey, mainly amber, and increased my apiary to 204 colonies, 14 of which are hybrids.

On Nov. 19 and 20, 1888, I placed 190 colonies in the cellar very heavy with bees and honey, with but few exceptions, and left 14 colonies on the summer stands. All seem to be wintering well as yet. The temperature in the cellar has been a little higher this winter than desirable, in consequence of the mild weather. It is now where I want it—40° to 42°. They seem to be doing quite well, and I have lost none that I know of yet.

Plenty of Ventilation.

I am experimenting with one colony. Late in the summer, the last prime swarm that issued I put into a 7-frame Langstroth-size hive, made for the purpose without end-boards, the bees being exposed to the weather. They were allowed to build their own comb, and they did well, making no drone-comb, and they filled the hive with brood-comb as straight as a shingle, and gathered enough to winter on.

I placed them in the cellar in that condition, to know how they would winter, and I must say that I never saw bees do better. They are as quiet as it is possible to be, and hardly a dozen dead bees are on the bottom-board—bees and hive being perfectly clean and sweet. This proves that plenty of ventilation in the cellar is a necessity, at least in my locality.

Not a colony in the cellar or on the summer stands shows any signs of diarrhea as yet, and my bees always winter on natural stores. I never expect to fuss with feeding sugar, when the bees can get honey. I have enough trouble in these days of adulteration, to convince some people that honey from the producer is pure and good.

As to the market here, it is not any higher this season than it was last, notwithstanding the scarcity of honey. The market was kept down early in the fall by some injudicious honey-producers selling their honey at less than it would have brought in the market, hence it still remains at from 12½ to 15 cents.

South Bend, Ind., Feb. 15, 1889.

NECTAR.

The Process of Evaporation by the Bees.

Written for the American Rural Home
BY G. M. DOOLITTLE.

Some bee-keepers hold that bees gather honey from the flowers and deposit it in the cells immediately, and if the hive is patented on purpose for evaporating nectar, or the watery parts of it evaporates itself, the bees will, when suitably thickened, seal it up. So they will seal it up, when properly thickened, but the hive has very little if anything to do with it.

When bees gather nectar, maple sap, or any other thin sweet, more than can be contained in the honey-sacs of the bees which stay in the hive, they deposit it in the cells until evening, when they hang in festoons in the hive to evaporate it.

Some claim that the bees which bring the nectar in from the field, deposit it in the cells, but my experiments have led me to believe that all honey brought in by the outside laborers is given to the young bees, they taking it into their sacs directly from the bee which brings it in; and if more is gathered than the sacs of the inside bees can contain, it is deposited by them in the cells till night, and then evaporated down, although this evaporation is going on to some extent during the daytime. At night all hands join, from the outside laborer with jagged wings, down to bees but a day or so old, when the nectar or thin sweet is taken into the honey-sac, thrown out on the proboscis, drawn back in again, and so on, until by the heat of the hive, these small particles of honey are brought to the right consistency, when it is deposited in the cells for sealing up.

In order to do this, the bees hang loosely so that when the proboscis is thrown out it shall not hit another bee, the combs or the hive.

Now by their great roaring, humming, or whatever we call it, the heat is increased in the hive till the nectar is thickened very fast, by this stirring up process, which is being gone through as spoken above.

Take a short straw in your mouth, and blow a drop of water gently through it out to the end, and then draw it in again, and you have an idea of the process, all except the stirring up. The bees do that part better than you can, because they have tools made on purpose for that business.

All bee-keepers of any experience can tell whether the bees have been getting honey of any amount during the day, by the roaring they make at night, as bees only make this roaring while reducing their honey. Let two or three days of rain succeed a plentiful honey harvest, and all roaring ceases with the night of the third day.

Many a night have I watched this reducing of thin nectar to honey, and by the light of a lamp you can see the tiny drops of nectar sparkle, as it is thrown out on the proboscis and drawn in again. When honey is coming in slowly, you will not be likely to see this process, as it goes on so slowly at such times.

All have doubtless observed that when bees are getting honey plentifully it shakes readily from the combs at night, while in the morning before the bees go into the fields, not a particle can be shaken from the combs; this going to show that most of the evaporating of the nectar is done at night.

Borodino, N. Y.

HOUSE-APIARIES.

Experience with Keeping Bees in Houses.

Written for the American Bee Journal

BY W. J. DAVIS, 1st.

From the answers given to Query 612, on page 85, I am inclined to think that some practical experience along the line of the second part of the question would have brought out quite different replies from those given, especially those who condemn without a trial.

I have been experimenting for a few years with house-apiaries, where I have kept bees away from home, and I must say, from three years' experience, that I am *more* than pleased with them.

House No. 1 is 8 miles from my home apiary; easily reached by either of two lines of railroad, which makes it more convenient in doubling the opportunities of going and returning. The house is 12x16 feet, and nicely accommodates 33 colonies, with plenty of chance of tiering-up the section-cases; besides room on the top row for 16 swarms, with room for only one section-case each.

The house is sided with 1-inch grooved siding, and painted two coats. Separate alighting-boards are attached on the outside for each colony, each board being 4 inches wide, and every alternate one painted white, and the next one red, both differing in color from the siding.

The bees do not have access to the inside of the building, but must pass out at the entrance. The advantages of such an arrangement are numerous, viz:

1. Economy. Such a house, and the hives to stock it, will cost less than the same number of hives made for out-of-door exposure. The hives are simple boxes unpainted, made the proper size to hold the number and kind of brood-frames desired, and covered with a light honey-board—I mean *board*, not cloth.

2. There is no cumbersome packing, or carrying to the cellar for winter.

3. If properly constructed, a far more even temperature can be maintained, both in the brood-chamber and section-cases, than with hives standing in the lawn.

4. It makes a superior honey-house, after the surplus has been removed from the hives.

5. The door is shut and locked at night, making everything secure from a class of beings that are not desirable in any community, yet probably all localities have them.

6. It secures a clean and convenient storage for such cases and sections as must be carried over until the next year.

House No. 2 is but 8x10 feet, and was a wintering-house worked over into a house-apiary. It accommodates 20 colonies.

The past three years have been poor honey seasons here, but those in the house-apiaries have done much the best. How they would do in a good honey season, I am not able to say; but I would not have the slightest objection to trying it. I think that the house-apiary would still be ahead. Bee-keepers are not the "bloated bondholders," in this part of the country.

Youngsville, Pa.

BEE-KEEPING

Considered as a Branch of Agriculture.

Read at the Ontario Agricultural Union

BY R. F. HOLTERMANN.

To be in a position to treat the subject before me, I must refer briefly to a few peculiarities in the method of fertilization in the organs of flower vegetation. In doing this, I am indebted to various scientific works.

The stamens and pistils are the essential organs of fertilization in the flower. On the stamens grows the pollen. The pistils are the bodies in which the seeds are formed. The pollen coming in contact with the pistils at a certain time is the important step towards reproductions. Many plants have not the anther and pistils upon the same flower; these must be indebted largely to insect life for fertilization. Again, many which do bear both anther and pistils must also owe their fertilization to insect life, self-fertilization being prevented by either the anther or pistils maturing first. Again, there are others not coming under the head of the two previous, which in order to yield the best seeds, and the largest number, must be fertilized by crossing.

It has been proved by experiment that in such cases pollen placed on the stigma of the flower on which it grew, becomes powerless when pollen is added from the complementary blossom; the prepotency is so arranged as to secure cross fertilization.

Fertilization of Fruit-Blossoms by the Bees.

Now let us take the apple. Each blossom carries five stigmas, and to each stigma belongs a division of the ovary constituting the core fruit. We have here an example of the stigma maturing before the anthers. In the construction of this, as I believe in almost every other flower, the recepta-

cle for the honey is so arranged that the insect cannot reach it without coming in contact with the anther and the pistils. The wisdom of this is manifest. In the case of the apple blossoms, the insect becomes dusted with pollen-grains, and when visiting another flower, deposits it upon the sticky surface of a part of the pistils, causing fertilization.

But one fertilization is not sufficient. To secure a perfect apple, five independent fertilizations have to take place. If none are effected, the calyx which forms the flesh, dries and soon drops. If, as is often the case, only four fertilizations take place, there is an imperfect development of the calyx, the four parts swelling, while the fifth develops imperfectly. The fruit of course is imperfect, and is very liable to drop off during the first storm. Opposite the hollow cheek on the apple you find the pips have not been matured.

Gooseberries, currants, raspberries are largely dependent upon insects for fertilization, and, in the last two, undeveloped parts are often found, due to imperfect fertilization, as in the apple, clover, especially white and Alsike, and not unfrequently the second growth of red (the corolla of which is shorter than in the first growth), is largely visited by bees, and who can estimate the advantages to be gained by the visits of these insects?

Of course it may be argued that other insects would act as a medium for the fertilization of flowers, and the honey-bee may not be required. Let us see. When we consider the frequent rains during the spring, which, for the time, hinder the visits of insects, and the uncertainty of the temperature, we must at once admit that any agent which gives us a more rapid and perfect fertilization of the blossoms which later develop into useful crops on the farm, is desirable, and that is just what the honey-bee does.

Having now shown the utility of the honey-bee to secure surer and larger crops, and even better specimens of fruit, we at once see the advantage of having bees at work on every farm?

Who Should Keep Bees?

The next question will be, Who should keep the bees? Probably the natural way will be for every man to gather his own crop. Some of our specialists have said, "We can make it pay better because we can with our experience, gather a larger and better crop," and give as an instance, the creamery as compared with farm butter-making. Now whilst the specialist is of greater use in advancing scientific bee-keeping, and is a blessing to the farmers who did not keep bees before he settled in their vicinity, the comparison between the specialist in bee-keeping and the creamery is faulty. Look at all the processes the product from the cow has to undergo before it becomes butter or cheese for the table. Not so with honey; the product when left by the bee is fit for table use, or in the case of extracted honey, becomes so by a very simple process, as easily learned, or more so, than milking a cow.

To point to the failures the farmer has made in bee-keeping, nothing is said, for in comparison the specialist has made as many; and there are probably as many failures in every other business. It may be claimed that the farmer has already "too many irons in the fire." That may be true, but the question then would be, Would he better remove some which year by year yield a less return for capital and labor invested, and which would not diminish the profits from other sources?

Some of our staunchest advocates of specialists are by practical experience feeling that they should combine bee-keeping with some other pursuit; that it is better not to have "all their eggs in one basket."

Many farmers may not, of course, be in a position to keep bees to advantage—this must be a matter of individual judgment.

Who are Canadian Bee-Men?

It will certainly be of value in considering this question, to know who are the bee-keepers of Ontario and of Canada. After a careful study of the question, I cannot to-day point out one who is keeping bees alone, and not combining it with something else, and out of these 90 per cent. are farmers, while a small percentage of the balance combine it with gardening.

Again, I doubt if any man could make bee-keeping in Ontario a paying business, unless he or his neighbors cultivated fields; for the bulk of our honey is secured from land which has been cleared from the primeval forest. Clover and thistle both yield first-class honey—basswood, or more properly linden, is the only surplus honey we take from the forest. This fact, together with what has been shown regarding the fertilization of fruit-blossoms and clover, make it apparent that bee-keeping is a branch of agriculture. But is it so recognized? The farmer recognizes it as such, and the various agricultural papers have been compelled to so class it. Our "cousins" across the line have given recognition of it as such by having bee-departments at various agricultural colleges, and even by having an experimental station devoted entirely to the advancement of bee-keeping. But how are we situated here? The absence of a bee-department at this institution, one so long established, offers no pleasing picture to our enterprise. In many instances where the different departments of the farm are referred to, bee-keeping comes under the head of "etc."

Market Quotations of Honey.

Our influential papers give market quotations for every other farm product but honey. What wonder, then, that the exhibit of honey at the Colonial and Indian Exhibition has been a matter of surprise to those visiting it? This lack of market quotations is an injury to bee-keepers, and is largely the cause of such varying prices; such quotations would also assist in developing our market. But far more all this lack of recognition is hindering the development of the resources of our country, and in reality impoverishing it. The British market will never open to us until we can give them an unfailing supply of honey. In England, when an article such as Canadian honey drops out of the market for a season, it is uphill work regaining the former position.

In closing I do not ignore the fact that we have amongst us some who see with disfavor every new bee-keeper, and every development of the industry. When a merchant is settled in a prosperous community, he would doubtless often desire to see a law passed to prevent another from starting in the same community; but in store-keeping, in bee-keeping as well as many other pursuits, it must be "the survival of the fittest," and the best way to look upon this question is not what is best for a few individuals, but for the community, for the country; and no argument can refute the statement that One wiser, more far-seeing, and One who never wrongs any one, has decreed that bee-keeping is a branch of agriculture.

Brantford, Ont.

BACTERIA.

The Causes of Foul Brood Among Bees.

Written for the American Bee Journal

BY GERD WENDELKEN.

I am extremely interested in the subject of foul brood, and have tried to get all the information about it I could.

Science says that all, or nearly all, diseases are caused by the development of minute vegetable organism, or so-called bacteria. These tiny plants, they say, produce spores, or seeds, which fly in the air, and produce, under certain conditions, foul brood.

Different denominations are applied to the causes of foul brood, such as

fungus, bacteria, bacillus alvei, and leptothrix. It is, I believe, the popular idea that all these are classed to the vegetable kingdom; but in statements about examining foul brood by the use of the microscope, it is said that millions of them are found in diseased colonies, and are also seen rolling and pushing by and over each other, and swimming much as a fish does, by the use of its fins.

Leptothrix belongs to vegetables, but Mr. Cheshire, according to his statement, saw them swimming rapidly either backwards or forwards. I once asked a Professor, "Are bacteria plants, or animals?" The answer was, "Vegetable."

Now, when bacteria move, as stated, then it would seem that plants had changed into living beings. I do not understand this. I think that plants produce plants, and animals produce animals, and nothing more.

Now I desire to understand how bacteria, of minute vegetable origin, can change to living beings, and swim backwards and forwards. I want someone to give me some light on this subject.

Last season my bees had stored much honey-dew; I feared disease, but to-day they had a good flight, and I found them all right.

Marietta, Ohio.

CONVENTION DIRECTORY.

1889. *Time and Place of Meeting.*

Mar. 30.—Agency, at Agency, Mo.
T. S. Smith, Sec., Agency, Mo.

Apr. 23.—DesMoines County, at Burlington, Iowa.
John Nau, Sec., Middletown, Iowa.

May 1, 2.—Texas State, at Greenville, Tex.
G. A. Wilson, Sec., McKinney, Tex.

May 4.—Susquehanna County, at Montrose, Pa.
H. M. Seeley, Sec., Harford, Pa.

May 21.—Northern Illinois, at Pecatonica, Ill.
D. A. Fuller, Sec., Cherry Valley, Ills.

☞ **In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.**

SELECTIONS FROM OUR LETTER BOX

Good Outlook for 1889.—J. A. Delamarter, East Meredith, N.Y., says:

I think that the Union is doing a fine work, and I feel it my duty to pay my fee, not because I need help, for I do not. I have 18 colonies, which were put into winter quarters in good condition. I got but very little honey last year, but I think that the outlook is better for the coming summer—I hope so, at least. The bees had flights until about three weeks ago, and it has been very cold since then.

Early Swarm—Maple Bloom.—J. A. Marsh, Scotia, Mo., on Feb. 15, 1889, writes:

I began the spring of 1888 with one colony of bees—a present from my father-in-law—which I increased to 3 colonies, and took 125 pounds of honey. The bees are in good condition now. The thermometer registered 78°, Fahr., to-day. The bees had a "picnic" on the maple bloom, and about 2 p.m. a swarm issued, or strayed from elsewhere; I hived it—about 1¼ pints of bees. Will it pay to try to save them? The BEE JOURNAL is a regular and highly-prized visitor.

[It would be better to return the small swarm to the parent colony, if that can be ascertained; but if not, to unite them with a weak or queenless colony will be the best disposal of them at this time of the year.—ED.]

Good Prospects for Honey.—T. M. Edwards, Kerrville, Tenn., on Feb. 12, 1889, says:

It is hard to get the old-fogy notions removed from the minds of many bee-keepers in this part of the country; yet a few begin to see the light. My bees are doing finely, being strong and healthy. They have a good time out in the air two or three times every week. I have 150 colonies, and prospects are good for the next crop of honey, which never fails to be pretty good. My crop, last year, was 43 pounds of comb honey per colony. There is no disease among the bees in this country.

Results of the Past Season.—W. H. Miller, Berrien Springs, Mich., on Feb. 14, 1889, says:

Last spring I commenced with 50 colonies in just fair condition, increased them by natural swarming to 86, and took about 700 pounds of comb honey, nearly all being white, in one-pound sections. I have 86 colonies packed in sawdust out-doors. All were in good condition when prepared for winter, and seem to be wintering well, as they keep very quiet.

Wintering Carniolan Bees.—Andrews & Lockhart, Pattens Mills, N. Y., on Feb. 20, 1889, writes as follows:

We never had bees winter so well as our Carniolans are doing this winter. There is not a handful of dead bees on any of the bottom-boards of the hives. The cellar has been kept at a temperature of 45° to 48° all winter, so far. The bees are in that quiet state in which every bee-keeper likes to see them. Bees are hanging below the frames in nearly every hive. Our Carniolans winter remarkably well, and they are more quiet in the cellar than any other strain of bees we ever had.

Our advertisement in the AMERICAN BEE JOURNAL has brought more calls than we have had from all the other bee-periodicals put together. As it is brimful of apicultural news *every week*, we presume others feel as we do—that we would not do without it for five times its cost. It has paid us ten fold the cost of the advertisements. Its large circulation, the world over, gives great advantage to its advertisers.

Report for 1888.—Wm. H. Ford, Marshalltown, Iowa, on Feb. 16, says:

I commenced the season of 1888 with 12 colonies of bees (part hybrids and part Italians), and increased them to 19 colonies. One swarm came to me on Aug. 26, and stored enough to winter on, thus making 20 colonies to begin the winter with. I put all of them into the cellar on Nov. 17, and they are wintering well so far. Last summer I took off about 300 pounds of honey, part extracted and part comb honey. The "old reliable" AMERICAN BEE JOURNAL makes its visits regularly every week, and is welcomed, for I think that no man who keeps bees can do without it for five times the cost.

Odors and Bees—Cleaning the Sections.—Jno. Handel, Savanna, Ill., writes as follows:

Is it not possible that bees are always attracted to the nectar in flowers by the smell, and that they simply use color as a landmark afterwards? I have often noticed that when flowers fail to secrete nectar, they also lack in odor. I think that not only bees, but the bee-keeper himself, with a little practice, can tell when there is a honey-flow, by the odor. Now, then, who can answer these questions: 1. Do the bees drive the odor out of the nectar-distilling cups of the flowers, by fanning it with their wings? Or, does the evaporation of the nectar release the odor, and the bees are attracted by it? Or, is it possible that the flowers attract bees, etc., by their colors, and are tickled by them, until they (the flowers) eject the sweet juice, after the fashion of the ant and plant-louse?

The best tool for scraping propolis from sections and separators that I have ever tried is, one-half of a pair of shears. Sharpen it occasionally.

AMERICAN BEE JOURNAL
ESTABLISHED IN 1861 — OLDEST BEE PAPER IN AMERICA

ALFRED H. NEWMAN,
BUSINESS MANAGER.

Business Notices.

If You Live near one post-office and get your mail at another, be sure to give the address that we have on our list.

Give a Copy of "Honey as Food and Medicine" to every one who buys a package of honey. It will sell lots of it.

Dr. Miller's Book, "A Year Among the Bees," and the AMERICAN BEE JOURNAL for one year—we send both for $1.50.

If you Lose Money by carelessly enclosing it in a letter, it is without excuse, when a Money Order, which is perfectly safe, costs but 5 cents.

New Subscribers can obtain the full numbers for 1888 and 1889 for $1.80, if application be made at once, before all the sets of 1888 are gone.

Paper Boxes—to hold a section of honey for retail dealers. We have two sizes on hand to carry sections 4¼x4¼ and 5¼x5¼. Price, $1.00 per 100, or $8.50 per 1,000.

Preserve Your Papers for future reference. If you have no **BINDER** we will mail you one for 60 cents; or you can have one FREE, if you will send us 3 new yearly subscriptions for the BEE JOURNAL.

Please write *American Bee Journal* on the envelope when writing to this office. Several of our letters have already gone to another firm (a commission house), causing vexatious delay and trouble.

Honey.—We have for sale a quantity of Extracted Honey in kegs holding about 220 pounds each, which we are selling, free on board the cars, at **8** cents per pound for Amber and **9** cents per pound for White.

In order to pay you for getting *new subscribers* to send with your renewal, we make you this offer. For each yearly subscriber, with $1.00, you may order 25 cents worth of any books or supplies that we have for sale—as a **premium.**

Apiary Register.—All who intend to be systematic in their work in the apiary, should get a copy of the Apiary Register and begin to use it. The prices are as follows:

For 50 colonies (120 pages)	$1 00
" 100 colonies (220 pages)	1 25
" 200 colonies (420 pages)	1 50

Red Labels for Pails.—We have three sizes of these Labels ranging in size for pails to hold from one to ten pounds of honey. Price, $1 for a hundred, with the name and address of the bee-keeper printed on them. Smaller quantities at one cent each; but we cannot print the name and address on less than 100. Larger quantities according to size, as follows:

	Size A.	Size B.	Size C.
250 Labels	$1.50	$2.00	$2.25
500 Labels	2.00	3.00	3.50
1,000 Labels	3.00	4.00	5.00

☞ Samples mailed free, upon application.

Alfalfa Clover.—For cultivation of this honey-plant, see page 245, of 1888.—We supply the seed at the following prices:—Per lb., 22c.; per peck, $3.00; per half-bushel, $5.50; per bushel of 60 lb., $10.00. If wanted by mail, add 10 cents per pound for bag and postage.

Always Mention your Post-Office, County and State when writing to this office. No matter where you may happen to be for the hour when actually writing—never mention anything but your permanent address. To do otherwise leads to confusion, unless you desire your address changed. In that case state the old as well as the new address.

Money in Potatoes, by Mr. Joseph Greiner. Price, **25** cents, postpaid. This is a complete instructor for the practical potato-grower, and explains the author's new system in 40 interesting lessons. It is for sale at this office.

Pure Phenol for Foul Brood.—Calvert's No. 1 phenol, mentioned in Cheshire's pamphlet on pages 16 and 17, can be procured at this office at 25 cents per ounce. Not being mailable, it must go by express.

Yucca Brushes, for removing bees from the combs, are a soft, vegetable fiber, and do not irritate the bees. We supply them at 5 cents each, or 50 cents a dozen; if sent by mail, add 1 cent each for postage.

We will Present a Pocket Dictionary for two subscribers with $2.00. It is always useful to have a dictionary at hand to decide the spelling of words, and their meaning.

Simmins' Non-Swarming System, and the AMERICAN BEE JOURNAL for one year, for $1.25. The subscription to the BEE JOURNAL may begin anew at any time.

We Supply Chapman Honey-Plant **SEED** at the following prices: One ounce, 40 cents; 4 ounces, $1; ½ pound, $1.75; 1 pound, $3. One pound of seed is sufficient for half an acre, if properly thinned out and re-set.

Send Us the Names of bee-keepers in your neighborhood who should take and read the AMERICAN BEE JOURNAL, and we will send them a sample copy. In this way we may obtain many regular subscribers, for thousands have never seen a copy, or even know of its existence. This is one way to help the cause along.

CLUBBING LIST.

We Club the *American Bee Journal* for a year, with any of the following papers or books, at the prices quoted in the **LAST** column. The regular price of both is given in the first column. One year's subscription for the American Bee Journal must be sent with each order for another paper or book:

	Price of both.	Club
The American Bee Journal	1 00	
and Gleanings in Bee-Culture	2 00	1 75
Bee-Keepers' Guide	1 50	1 40
Bee-Keepers' Review	1 50	1 40
The Apiculturist	1 75	1 65
Bee-Keepers' Advance	1 50	1 40
Canadian Bee Journal	2 00	1 80
Canadian Honey Producer	1 40	1 30
The 8 above-named papers	5 65	5 00
and Langstroth Revised (Dadant)	3 00	2 75
Cook's Manual (**old edition**)	2 25	2 00
Bees and Honey (Newman)	2 00	1 75
Binder for Am. Bee Journal	1 60	1 50
Dzierzon's Bee-Book (cloth)	3 00	2 00
Root's A B C of Bee-Culture	2 25	2 10
Farmer's Account Book	4 00	2 20
Western World Guide	1 50	1 30
Heddon's book, "Success,"	1 50	1 40
A Year Among the Bees	1 75	1 50
Convention Hand-Book	1 50	1 30
Weekly Inter-Ocean	2 00	1 75
How to Propagate Fruit	1 50	1 25
History of National Society	1 50	1 25

Do not send to us for sample copies of of any other papers. Send for such to the publishers of the papers you want.

Hastings' Perfection Feeder.—This excellent Feeder will hold 2 quarts, and the letting down of the feed is regulated by a thumb-screw. The cap screws securely on. It is easy to regulate—either a spoonful or a quart—and that amount can be given in an hour or a day, as desired. By it the food can be given where it is most needed—just over the cluster. Not a drop need be lost, and no robber bees can get at it. A single one can be had for 40 cents, or a dozen for $3.50, and it can be obtained at this office. Postage 10 cents extra.

International Bee-Convention.—The Pamphlet Report of the Columbus, Ohio, Bee-Convention can be obtained at this office, by mail, postpaid, for 25 cents. This pamphlet contains the new bee-songs and words, as well as a portrait of the President. Bound up with the history of the International Society, and a full report of the Detroit, Indianapolis and Chicago conventions, for 50 cents, postpaid.

Clover Seeds.—We are selling *Alsike Clover Seed* at the following prices: $8.00 per bushel; $2.25 per peck; 25 cents per lb. *White Clover Seed:* $10.00 per bushel; $2.75 per peck; 30 cents per lb. *Melilot or Sweet Clover Seed:* $6.00 per bushel; $1.75 per peck: 20 cents per lb.—by express or freight.

A Modern Bee-Farm and its Economic Management, by S. Simmins, of Rottingdean, Brighton, England, is the title of a new book of about 200 pages, printed on excellent paper, and nicely bound in cloth. Price $1.00. For sale at this office.

The Date on the wrapper label of your paper indicates the end of the month to which you have paid. If that is past, please send us a dollar to carry the date another year ahead.

Honey and Beeswax Market.

SAN FRANCISCO.

HONEY.—White comb, 10@11½c.; dark, 6½@8c. White extracted, 6½c.; light amber, 5½@6c.; dark amber, 4½@5½c.
BEESWAX.—18@22c.
Jan. 25. O. B. SMITH & CO., 423 Front St.

BOSTON.

HONEY.—We quote: Best white clover 1-pounds, 17@18c.; best 2-lbs., 16@17c. Extracted, 8@9c. The trade is dull.
Jan. 19. BLAKE & RIPLEY, 57 Chatham Street.

DETROIT.

HONEY.—Best white 1-lbs., 16@17c. Sales slow. Extracted, 9@10c.
BEESWAX.—22@23c.
Feb. 11. M. H. HUNT, Bell Branch, Mich.

CHICAGO.

HONEY.—We quote: White clover 1-lbs., 16@17c.; 2-lbs., 14@15c. Good dark 1-lbs., 13@14c.; 2-lbs., 12@13c. Buckwheat 1-lbs., 13@14c.; 2-lbs., 11@11½c.—Extracted, 6½@8½c., depending upon quality and style of package. Market dull and stock sells slowly.
BEESWAX.—22c.
Jan. 24. S. T. FISH & CO., 189 S. Water St.

ST. LOUIS.

HONEY.—Choice white clover comb, 13@15c.; fair 11@12c.; dark, 8@10c. Extracted, dark, in barrels, 5@5½c.; choice, 5½@6c.; in cans, 6@7½c. Market is quiet but steady.
BEESWAX.—20c. for prime.
Jan. 17. D. G. TUTT & CO., Commercial St.

CHICAGO.

HONEY.—Best 1-lbs., 17@18c. Extracted, 7@9c. for best quality, according to body, flavor and style of package. Trade is limited to local consumption. Off grades of comb honey are slow at lower figures than given above. But few will buy dark comb.
BEESWAX.—22c. R. A. BURNETT,
Jan. 17. 161 South Water St.

MILWAUKEE.

HONEY.—We quote: Fancy white 1-lbs., 17@18c.; 2-lbs., 15@16c. Good dark 1-lbs., 15@16c.; 2-lbs., 14@15c.; fair 1-lbs., 12@14c. Extracted, white, in kegs and ½-barrels, 8½@9c.; amber in same, 7½@8c.; in pails and tin, white, 9½@10c.; in barrels and ½-barrels, dark, 5½@6c. Market dull. The very best sells slowly, and inferior qualities are neglected very much. Damaged, broken and leaky comb honey not wanted.
BEESWAX.—22@23c.
Jan. 10. A. V. BISHOP, 142 W. Water St.

CINCINNATI.

HONEY.—We quote extracted at 5@8c. per lb. Best white comb honey, 12@16c. Demand is only moderate. No overstocking of the market.
BEESWAX.—Demand is good—20@22c. per lb. for good to choice yellow, on arrival.
Feb. 21. C. F. MUTH & SON, Freeman & Central Av.

KANSAS CITY.

HONEY.—White 1-lbs., 16c.; fall, 14c.; California 1-lbs. 16c.; white 2-lbs., 14c.; extra 2-lbs., 13c. Extracted, white California, 8c.; amber, 7c. Market dull.
BEESWAX.—20@22c.
Jan. 22. CLEMONS, CLOON & CO., cor 4th & Walnut

KANSAS CITY.

HONEY.—Choice 1-pounds, 15@16c.; dark 1-lbs. 12c.; 2-lbs., 14c.; dark, 11c. White extracted in 60-lb. cans, 8c.; amber, 7c.; in barrels and kegs, 5@8c. Demand good, prices steady, and stock large.
BEESWAX.—None in market.
Jan. 4. HAMBLIN & BEARSS, 514 Walnut St.

DENVER.

HONEY.—White, in 1-lb. sections, 15@16c. Extracted, 9@10c.
BEESWAX.—20c.
Jan. 1. J. M. CLARK & CO., 1409 Fifteenth St.

NEW YORK.

HONEY.—We quote: Fancy white 1-lbs., 14@15c.; 2-lbs., 12c Fair white 1-lbs., 14@15c.; 2-lbs., 10 to 11c. Buckwheat 1-lbs, 10@11c.; 2-lbs., 9@10c. Extracted, white, 7½@8c.; dark buckwheat, 6@6½c. which is in good demand. Market dull, except for extracted buckwheat; for all other kinds it is quiet, owing to unseasonable weather, we believe.
HILDRETH BROS. & SEGELKEN,
Jan. 10. 28 & 30 W. Broadway, near Duane St.

SAN FRANCISCO.

HONEY.—We quote: Extracted, white, 6½ cents; amber, 6c. Comb, white 1-lbs, 13@14c.; 2-lbs., 13c.; amber, 10@11c. Demand is of a jobbing nature, and arrivals are small.
BEESWAX.—19@20c.
SCHACHT, LEMCKE & STEINER,
Jan. 8. 16 & 18 Drumm St.

Your Full Address, plainly written, is very essential in order to avoid mistakes.

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1 Tested Italian, before May 15, $2.25; after, $1.75.
3 " " " 6.00; " 4.50.
1 Untested " " " 1.00, " .90.
3 " " " 2.75; " 2.50.
1-Frame Nucleus, with Two Pounds of Bees, 2.35.

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6A17t *Mention the American Bee Journal*

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